CLAIMS

What is claimed is:

1. A variable reluctance resolver comprising multiple stator magnetic poles having resolver exciter coils and resolver output coils, which respectively output the X component and Y component of a rotary angle in accordance with the rotation of a rotor, wherein the resolver output coils are wound such that the output voltage polarities of resolver output coils wound around at least 3 adjacent stator magnetic poles are the same, the resolver output coils are divided into at least 2 or a greater even number of groups, and resolver output coils within each group of the at least 2 or a greater even number of groups are connected in series such that the output voltage polarities of adjacent groups of the at least 2 or a greater even number of groups differ with respect to one another.

2. The variable reluctance resolver according to claim 1 wherein each group has outermost output coils and output coils between the outermost output coils and wherein the number of turns of each of the outermost output coils is less than the number of turns of the output coils between the outermost output coils to thereby reduce the effect of external magnetic flux.

3. The variable reluctance resolver according to claim 2 wherein the outermost coils have the same number of turns.

4. The variable reluctance resolver according to claim 2 wherein the outermost coils of adjacent groups have the same number of turns.

5. The variable reluctance resolver according to claim 1 further comprising a magnetic shield to further reduce the effect of external magnetic flux.

6. The variable reluctance resolver according to claim 1 wherein the variable reluctance resolver has an axis multiple angle of 7, an excitation pole pair count of 5, an output pole pair count of 2, and a stator magnetic pole count of 20, wherein all output coils are divided into 4 groups, one group of the 4 groups includes output coils wound around 5 adjacent stator magnetic poles such that the polarity of output voltages in the group is the same, and the output coils in each of the four groups are serially connected so that the output voltage polarities of adjacent groups are different.

7. The variable reluctance resolver according to claim 6 wherein each group has two outermost output coils and three output coils between the outermost output coils and wherein the number of turns of each of the outermost output coils is less than the number of turns of the three output coils between the outermost output coils to thereby reduce the effect of external magnetic flux.

8. The variable reluctance resolver according to claim 7 wherein the outermost coils of adjacent groups have the same number of turns.

9. The variable reluctance resolver according to claim 7 wherein the two outermost coils have the same number of turns.

10. The variable reluctance resolver according to claim 7 wherein the three output coils between the outermost output coil include a middle coil between two adjacent output coils and wherein the middle coil has more turns than the two adjacent coils.

11. A variable reluctance resolver comprising a rotor, a stator body having a plurality of stator magnetic poles, resolver exciter coils wound around the plurality of stator magnetic poles, and resolver output coils for outputting the X and Y components

of a rotary angle of the rotor wound around the stator magnetic poles such that the plurality of resolver output coils are divided into an even number of at least two groups, at least one group having resolver output coils wound around at least three sequential stator magnetic poles, and each group of the even number of at least two groups connected in series to output the same polarity wherein adjacent groups of the even number of at least two groups have different voltage polarities.

12. The variable reluctance resolver according to claim 11 wherein each group has outermost output coils and output coils between the outermost output coils and wherein the number of turns of each of the outermost output coils is less than the number of turns of the output coils in between to thereby reduce the effect of external magnetic flux.

13. The variable reluctance resolver according to claim 11 further comprising a magnetic shield to further reduce the effect of magnetic flux.

14. The variable reluctance resolver according to claim 11 further comprising an axis multiple angle of 7, an excitation pole pair count of 5, an output pole pair count of 2, and a stator magnetic pole count of 20, wherein all output coils are divided into 4 groups, one group of the 4 groups includes output coils wound around 5 adjacent stator magnetic poles such that the polarity of output voltages in the group is the same, and the output coils in each of the four groups are serially connected so that the output voltage polarities of adjacent groups are different.

15. The variable reluctance resolver according to claim 14 wherein each group has two outermost output coils and three output coils between the outermost output coils and wherein the number of turns of each of the outermost output coils is

less than the number of turns of the three output coils between the outermost output coils to thereby reduce the effect of external magnetic flux.

16. The variable reluctance resolver according to claim 15 wherein the outermost coils of adjacent groups have the same number of turns.

17. The variable reluctance resolver according to claim 15 wherein the two outermost coils have the same number of turns.

18. A variable reluctance resolver comprising a rotor, a stator body having a plurality of stator magnetic poles, resolver exciter coils wound around the plurality of stator magnetic poles, and resolver output coils for outputting the X and Y components of a rotary angle of the rotor wound around the stator magnetic poles and having a multiple angle of 7, an excitation pole pair count of at least 5, an output pole pair count wherein the excitation pole pair count and the output pole pair count add or subtract to equal the multiple angle of 7, and a stator magnetic pole count of 20, wherein all output coils are divided into 4 groups, one group of the 4 groups includes output coils wound around 5 adjacent stator magnetic poles such that the polarity of output voltages in the group is the same, and the output coils in each of the four groups are serially connected so that the output voltage polarities of adjacent groups are different.